1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,683	10/03/2003	David R. Rich	02-38	9969

30031 7590 11/17/2006

MICHAEL W. HAAS, INTELLECTUAL PROPERTY COUNSEL
RESPIRONICS, INC.
1010 MURRY RIDGE LANE
MURRYSVILLE, PA 15668

EXAMINER	
ROSENBERGER, FREDERICK F	
ART UNIT	**PAPER NUMBER**
2884	

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	**Application No.** 10/678,683	**Applicant(s)** RICH ET AL.
	Examiner Frederick F. Rosenberger	**Art Unit** 2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 August 2006 has been entered.

Response to Amendment

2. Applicant's reply, filed 23 August 2006, has been received and entered. Accordingly, claims 1 and 6-8 have been amended. Claims 9 and 16-20 have been cancelled. No new claims have been added. Thus, claims 1-8 and 10-15 are currently pending in this application.

3. Applicant's amendment of the claims has successfully overcome the objection to claims 1, 8, and 16, as detailed in paragraphs 3 of the previous Office action.

Claim Objections

4. Claim 10 is objected to because of the following informalities: In claim 10, lines 2, the recitation of "the chamber" lacks proper antecedent basis in claim 8, as no

chamber has been specified in the amended claim (applicant has amended claim 8 to remove all recitations of the chamber). Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6, 8, 10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rich (US Patent # 5,693,944).

With regards to claim 1 and 8, Rich discloses a gas analyzer (Figures 12 and 13) comprising:

An IR radiation source **28** to emit a plurality of IR wavelengths (Figure 2);

A radiation detector **30** (Figure 2) capable of measuring the gas content based on IR absorption (column 1, lines 57-63), wherein the source and detector area space a first distance apart by virtue of housing/receptacle **26** (Figure 1);

A sample cell comprising hollow cylindrical left-hand and right-hand sections, **316** and **318** respectively formed on an integral platform **320** to form a cell body with a first flowpath (hollow bores **332** and **336** in Figures 12-14) and a cell core **314** secured between the left-hand and right-hand sections of the body with a second flowpath disposed therethrough, said second flowpath through the core comprising a central flowpath region **328**, a connecting region (right half region of flowpath **332**) to the input flowpath **332**, and a connecting region **334** to the outlet flowpath **336;**

And first and second optical apertures (**340** and **342**) with first and second polymer windows (**346** and **348**) adjacent to opposite ends of the central flowpath **328** to allow for infrared characterization of the gas content, with each window held in place via snap-in retainer rings (**350** and **352** respectively) displaced around each window section.

Rich is silent with regards to the sample cell core, in an unassembled configuration, being detached from the sample cell body. Rich is also silent with regards to the sample cell core being secured to the sample cell body when in an assembled configuration. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the sample cell core separate from the sample cell body, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) (The claimed structure, a lipstick holder with a removable cap, was fully met by the prior art except that in the prior art the cap is "press fitted" and therefore not manually removable. The court held that if it were considered desirable for any reason to obtain access to the end of [the prior art's] holder to which the cap is applied, it would be obvious to make the cap removable for that purpose.").

Rich is further silent with regards to the specific relation between the cell core width, the thickness of the first and second windows, and the cell body. Reference to Figures 12 and 13 show that the interior core region is substantially smaller than the U-shaped casing **322** of the cell body. The change of the U-shaped casing to be substantially equal to the cell core would constitute a mere change in size. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). In the present case, the U-shaped casing can be modified to be smaller, such that the combination of thickness of the first window and the cell core width (interior region of device shown in Figure 14) defines a maximum width of the sample cell without destroying the functionality of the device.

With regards to the limitations for the use of the sample cell in a sidestream gas monitoring system, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case, there is nothing in the prior art gas monitoring system of Rich '944 which would prevent its use in a sidestream gas monitoring system.

With regards to claims 2 and 14, Rich discloses first and second optical apertures (**340** and **342**) with first and second polymer windows (**346** and **348**) adjacent to opposite ends of the central flowpath **328**.

With regards to claims 3 and 12, Rich discloses the second flowpath through the core comprises a central flowpath region **328**, a connecting region (right half region of flowpath **332**) to the input flowpath **332**, and a connecting region **334** to the outlet flowpath **336,** thus forming a substantially "Z-shaped" configuration.

With regards to claims 4 and 13, Rich discloses a portion of the Z-shaped configuration adjacent to the first window (see Figure 14).

With regards to claims 5 and 15, Rich discloses that each window is held in place via snap-in retainer rings (**350** and **352** respectively) displaced around each window section.

With regards to claim 6, the modifications to Rich discussed in claim 1 above already provide for separate cell core and cell body components. As such, attaching the cell core in the interior of the cell body would invariably lead to a recess or opening for receptacle of the cell core, thus satisfying the claim limitations.

With regards to claim 10, Rich is silent with regards to the sample cell core being mechanically retained. Rich already discloses mechanical retention of components using a snap-in retainer ring (**350** or **352**) around an aperture (**340** or **342**) of the core region **314**. Given that any inserted core region would have to fit through the aperture, use of the snap-in retainer ring system to hold the core in place would have been obvious. Thus, it would have been obvious to a person having ordinary skill in the art to modify Rich to use the snap-in retainer ring to hold the inserted sample cell core in place in the sample cell body so as to minimize the amount of additional fastening techniques necessary in assembly of the completed sample cell.

8. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rick, as applied to claims 1 and 8 above, and further in view of Clement (US Patent # 5,256,160).

Rich discloses all the limitations of the parent claims 1 and 8, as described above. However, Rich does not disclose any form of mechanical keying of the sample cell core to insure alignment between the flowpaths of the core and the body.

Clement teaches a disposable inline valve mechanism for use in biomedical applications, as illustrated in Figures 1-3. Clement discloses a body **12** with air flowpath **28** extending longitudinally through. Said body **12** is molded to include a cylindrical opening **40** intercepting the air flowpath **28** and capable of receiving a one-piece rotor **50**, with flowpath **64** disposed therethrough (column 6, lines 26-36). Said rotor **50** in a stationary position, wherein fluid communication between flowpaths **28** and **64** is achieved, is analogous to the inserted sample cell core of the claimed invention. Clement further teaches that the rotor **50**, once inserted into the body **12**, is mechanically retained in place via ridge **52** (reference Figure 3). Ridge **52** on the rotor **50** fits snug with a groove **54** on body **12**. This insertion method not only provides a means of retention of the rotor **50** to the body **12**, but also serves as mechanical keying of the rotor **50** to insure lateral alignment of the axes of the flowpaths **28** and **64**, as illustrated in Figure 3.

Thus, it would have been obvious to a person having ordinary skill in the art to modify Rich to include a mechanically keyed sample core as a means of circumventing labor intensive practices for insuring alignment of flowpaths, as taught by Clement.

9. Claims 1, 2, 6, 8, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braig et al. (US Patent # 5,932,877).

With regards to claims 1 and 8, Braig et al. discloses a sidestream gas monitoring system (abstract) comprising:

A sidestream gas monitor comprising:

A radiation source **26** (Figure 3), which uses an emitter **25** to emit a plurality of wavelengths of IR radiation absorbable by a selected gas; and,

A radiation detector **16** (Figure 3) positioned to sense radiation of a plurality of wavelengths emitted from the radiation source **25**, whereby the amount of IR radiation from the source that impinges on the detector is proportional to the content of the selected gas (column 1, lines 6-16; column 8, lines 33-58);

A sample cell **18** (Figure 4) having a passage **28** therethrough and including a first optical aperture **44** (Figures 5 and 6) to allow IR radiation to pass through the passage **28**, wherein the sample cell includes:

A sample cell body region, defined as exterior to the region **40** (Figures 4 and 5), with a first passage **34** defined therethrough;

A sample cell core region, defined as interior to the region **40**, with a second passage **28** defined therethrough in a direction corresponding to the cell width, wherein the first and second passages are connected;

A first window **30** disposed over the optical aperture **44** (Figure 6), wherein the thickness of the window and the cell body width (illustrated in Figure 5) defines a width greater than that of the cell body and a maximum width over the entire length of the sample cell, wherein the cell core width is substantially the same as the distance between radiation source **26** and the detector **16** (Figure 3).

Braig et al. are silent with regards to the sample cell core being separate from the sample cell body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the sample cell core separate from the sample cell body, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) (The claimed structure, a lipstick holder with a removable cap, was fully met by the prior art except that in the prior art the cap is "press fitted" and therefore not manually removable. The court held that if it were considered desirable for any reason to obtain access to the end of [the prior art's] holder to which the cap is applied, it would be obvious to make the cap removable for that purpose.").

With regards to claims 2 and 14, Braig et al. disclose first and second optical apertures **40** and **44** (Figures 4 and 6) with first and second windows **30** and **32** (Figures 3 and 6) adjacent to opposite ends of the central flowpath **28** in the cell core region.

With regards to claims 6 and 10, the modifications to Braig et al. discussed in claim 1 above already provide for separate cell core and cell body components. As such, attaching the cell core in the interior of the cell body would invariably lead to a recess or opening for receptacle of the cell core, thus satisfying the claim limitations. Further, with regards to claim 10, Braig et al. are silent with regards to mechanical retention of the core in the chamber. However, some form of mechanical retention would be inherently necessarily to hold separate structures together. Further, in Figure 3, Braig et al. illustrate a clamping arrangement between the source **26**, the detector **16**, and the central core region, signified by passage **28**) of the gas cell **18** wherein mechanical retention of the core could be attained.

10. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braig et al., as applied to claims 1 and 8 above, and further in view of Clement (US Patent # 5,256,160).

Braig et al. discloses all the limitations of the parent claims 1 and 8, as described above. However, Braig et al. does not disclose any form of mechanical keying of the sample cell core to insure alignment between the flowpaths of the core and the body.

Clement teaches a disposable inline valve mechanism for use in biomedical applications, as illustrated in Figures 1-3. Clement discloses a body **12** with air flowpath **28** extending longitudinally through. Said body **12** is molded to include a cylindrical opening **40** intercepting the air flowpath **28** and capable of receiving a one-piece rotor **50**, with flowpath **64** disposed therethrough (column 6, lines 26-36). Said rotor **50** in a stationary position, wherein fluid communication between flowpaths **28** and **64** is achieved, is analogous to the inserted sample cell core of the claimed invention. Clement further teaches that the rotor **50**, once inserted into the body **12**, is mechanically retained in place via ridge **52** (reference Figure 3). Ridge **52** on the rotor **50** fits snug with a groove **54** on body **12**. This insertion method not only provides a means of retention of the rotor **50** to the body **12**, but also serves as mechanical keying of the rotor **50** to insure lateral alignment of the axes of the flowpaths **28** and **64**, as illustrated in Figure 3.

Thus, it would have been obvious to a person having ordinary skill in the art to modify Braig et al. to include a mechanically keyed sample core as a means of circumventing labor intensive practices for insuring alignment of flowpaths, as taught by Clement.

Response to Arguments

11. Applicant's arguments filed 23 August 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that the sample cell of the present invention is for use in a sidestream gas monitoring system, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In the present case, applicant argues that the intended use of a sidestream gas monitor structurally affects the configuration of the gas cell (see bottom of page 6 through top of page 7). However, the structure cited in the Rich '944 patent is for alignment with a transducer housing/receptacle. There is nothing in the structure of the cell itself that would preclude its use in a sidestream gas monitoring system. Applicant contends that because they use a different transducer housing for the sidestream system the sidestream sample cell must have a width to enable lengthwise insertion of the cell in the receptacle. The examiner continues to maintain that the width of the cell is a design choice with regards to size and would not depend on its application in a sidestream or mainstream system, but rather the choice of transducer housing/receptacle.

Applicant further argues that it would not be obvious to modify the U-shaped casing of the Rich '944 sample cell to achieve the claimed width relationship (see middle of page 7). The examiner continues to maintain that it would be obvious to modify the width as being an obvious design choice with regards to size. As mentioned in previous actions, absent the U-shaped alignment marks extending beyond the width of the cell region, rough alignment with the transducer housing/receptacle could still be achieved thereby maintaining the function of the gas cell. In other words, a change in size of certain features of the gas cell does not destroy the functionality of the gas cell, i.e. to provide a gas pathway and an optical interrogation pathway.

In addition, changes in size of the width could be envisioned by one of ordinary skill in the art that would achieve the required alignment of the gas cell with the transducer housing/receptacle. For example, instead of the U-shaped protrusions show in Figures 12-14, a recess could be provided wherein protrusions could be provided on the transducer housing/receptacle for alignment thereto. The decision to provide alignment protrusions on the cell or alignment protrusions on the transducer housing/receptacle would be an obvious matter of design choice.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, a manipulation of the size of the structures of the gas cell would have been well known to one of ordinary skill in the art at the time the invention was made.

Further, it is noted that the designation of the different aspects of Figure 14 of Rich '944 which comprise the core and the body of the cell are somewhat arbitrary. In that sense, one could define the cell core that includes the U-shaped protrusions illustrated in Figures 12-14. Thus, the cell core would have a maximum width by virtue of the protrusions, which would be greater than the cell body width.

For the reasons set forth above, the examiner maintains the rejections.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dreyer (US Patent # 5,942,755) teaches an IR gas monitoring system wherein the width between optical windows of the device defines the maximum width of the gas cell (Figure 1).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick F. Rosenberger whose telephone number is 571-272-6107. The examiner can normally be reached on Monday - Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frederick F. Rosenberger
Patent Examiner
GAU 2884

DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800